City of Lafayette Staff Report

For:	City Council
By:	Engineering Services Manager
Date Written:	May 15, 2009
Meeting Date:	May 26, 2009
Subject:	Stanley Boulevard/Springbrook Road Traffic Calming Project-Approval of Design Plans

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Introduction

The Stanley Boulevard/Springbrook Road neighborhood participated in the City's Traffic Calming Program and developed a plan that was approved in a neighborhood vote. The plan covers the section of road between Camino Diablo and the city limit, and responds to resident concerns about traffic safety in the area, especially excessive vehicle speeds. Speeding was believed to contribute to one high-profile collision near the Acalanes High School that resulted in a fatality in March 2007. The Stanley/Springbrook traffic calming plan was recommended for approval by the Circulation Commission and ultimately adopted by the City Council in March 2008. The neighborhood undertook a fund raising effort to match the City's funding to construct the project and committed its share to the City Council in January 2009. Over the past months, staff has developed detailed construction drawings to implement the approved plan. There is now an issue dealing with how the newly adopted Fire Code affects the traffic calming design at one road section, and a finding by the City Council is now needed to approve the design layout for construction.

Discussion

During the traffic calming plan development process, some in opposition raised concerns about the ability of emergency response vehicles, especially fire trucks, to maneuver around or over the traffic calming devices. At that time, staff committed to working with the Fire District and make best efforts to create a mutually-acceptable design. Over the past months, staff has had numerous contacts, including two design review meetings, with District staff, including the Fire Marshal. While we have been successful in addressing most of District staff's comments, there remain irreconcilable differences in the interpretation of the Fire Code as it applies to one section of the street between Quandt Road and Vacation Drive.

As additional background, the Fire District recently adopted the 2007 California Fire Code and asked all cities within the District to ratify this adoption. Lafayette did so by City Council Resolution 2008-15 in April 2008. In adopting said resolution, the City reserved its rights to make future modifications of the Code. Staff also recalls that the Fire District pledged to work

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cooperatively with city staff on reasonable compromises in situations where the code provisions may prove to be insufficiently pragmatic.

As shown on Sheet 5 of the layout drawings (Attachment 2), the traffic calming concept for the block between Quandt Road and Vacation Drive consists of road narrowing by installing a 145-foot-long median with "pinch points" at either end. The idea is to change the wide-open feel of the street and present approaching drivers with visual cues of a narrow street, thus encouraging them to slow down. The need to preserve on-street parking and accommodate a new sidewalk on the north side adds to the challenge of fitting the design within the given right-of-way. Staff is proposing a design consisting of the following elements working in combination to produce the intended traffic calming effect:

- A four-foot-wide center median that measures six inches tall at the two ends and tapering to three inches tall in the middle portion. The "depressed" mid-section is to allow vehicles to drive over the median to turn left into or backing out of fronting driveways. The median surface is designed to have an earth-tone colored paving as a visual accent.

- At the two ends of the median where the median height is six inches, there would be a six-foot-wide traffic island on either side to create a pinch point. The pinch points and median would result in a nine-foot travel lane in each direction for this 145-foot section of road. (To provide some context, the State Department of Transportation defines a standard lane for new construction to be twelve feet. Most freeways and expressways have twelve-foot lanes. Caltrans accepts ten feet as the minimum width in retrofit cases. Many local residential streets and even thoroughfares with low speed limits have ten-foot lanes, such as portions of Mt. Diablo Boulevard. Low volume residential streets in difficult topography sometimes have street widths of 16 feet for two-way traffic.) The traffic islands would also have a colored surface.

- In deference to the needs of the Fire District, the curbs of the center median and traffic islands would be mountable instead of the traditional vertical curbs. The mountable design allows vehicles with high undercarriage clearance and large wheels to easily drive over the curbs much in the same fashion as driving over a speed hump.

In reviewing this design, Fire District staff has objected to the nine-foot lane widths at the subject section of Stanley Boulevard. This objection is ostensibly based on Section 503.2.1 of the Fire Code, which states, "Fire apparatus access roads shall have an unobstructed width of 20 feet..." (See Attachment 1.) District staff views the center median and the traffic islands at the pinch point locations as obstructions, and with the support of the Fire Marshal, has ruled that a minimum of ten feet of "unobstructed width" in each direction of travel would be required at these locations. Staff has attempted to explain that by modifying the median curbs to be mountable, the obstructing characteristics of these facilities are effectively mitigated as far as large vehicles like fire trucks are concerned. As described earlier, the mountable curbs allow fire trucks to drive over them in the same manner as driving over a speed hump. The Fire Code does not classify speed humps as "obstructions," and the mountable median and traffic islands are nothing more than a variation on that theme. Moreover, while a nine-foot

travel lane technically falls short of the Fire Code standard, in practice it is sufficient to allow a fire truck to pass freely. If necessary, a fire truck with its flashing strobe lights and blaring sirens could even straddle the center median and pass unimpeded in this short section of roadway.

Upon receiving feedback from the District, staff did explore alternatives for complying with the road width requirement; however, the options are limited and not wholly desirable as discussed below.

- The center median could be narrowed to two feet wide to give an extra foot to the travel lane in each direction. Long, skinny medians less than four feet wide are generally undesirable because they do not function effectively to delineate and separate traffic. Overly narrow medians could also be straddled by standard-sized vehicles, thus creating an attractive nuisance and potentially a traffic hazard.

- The traffic islands on either side of the center median could be narrowed to five feet wide, again to give an extra foot to the travel lane in each direction. With the current design, the islands are just wide enough to align with the on-street parking width on both sides of the road, which the neighborhood has expressly requested to preserve. The parking lanes are seven feet wide, barely sufficient for a large parked vehicle to be out of the way of passing vehicles. Narrowing these islands will effectively reduce this clearance space to the point where passing vehicles could strike the side of parked vehicles.

- The roadbed could be widened to a sufficient width to accommodate all the facilities described. There is limited right-of-way along the north side since it is already being taken up by a new sidewalk currently under construction. Along the south side, the setback of houses from the street is unusually shallow. The depth of a typical driveway between the street curb and garage is about 22 feet, barely sufficient to have clear spaces in front and behind a vehicle parked in said driveway. Any widening of the road will not only place street facilities very close to the houses, but result in parked cars in driveways protruding beyond the street curb. Staff does not believe either to be a desirable situation.

- The center median could be eliminated altogether. While this would in fact address the District's concern, it substantially detracts from the traffic calming benefits of the project. The design relies on the visual presence of the center median to convey the character of a slow street to drivers. It is also important to note that traffic calming devices along the entire project work in coordination to reinforce the notion of slow driving in order to effectively alter driving behavior. Degrading the effectiveness at one location would have a negative impact on the overall plan.

Staff does not recommend any of the above options because we believe that the current design best achieves the traffic calming goals set by the neighborhood and reasonably accommodates access for emergency response. Staff views the District's objections as based on an unreasonably strict interpretation of a technicality that does not wholly consider the practical

circumstances and mitigations made in the design, nor balance the City's needs to modify facilities within its right-of-way for other public safety reasons.

Staff has also consulted with the City Attorney regarding the City's obligations to strictly comply with the Fire Code and how they may relate to the City's authority to regulate and modify facilities within the public right-of-way to accommodate other public welfare and safety needs. The City Attorney has opined that the authority relied on by the Fire District does not compel the City to adopt its recommendations, for several reasons. First, the Fire Code sections cited by the Fire District do not appear to abrogate the City's authority over its right-of-ways. For example, the California Streets and Highways Code expressly authorizes a city to acquire, maintain or construct city streets of less than otherwise mandatory minimum widths, where the city council determines by resolution passed by a four-fifths vote that the public convenience and necessity demand it. Here, where the rationale is competing health and safety concerns related to vehicle collisions, not merely convenience and necessity, that finding could easily be made. Second, California cities have discretion not to adopt the 2007 California Fire Code, or to adopt it with amendments where necessary based on local conditions. Accordingly, to the extent that the sections cited by the District are even applicable, the City could override that applicability by expressly not adopting them, adopting them with modifications, or making findings to exempt certain projects from said sections. Lastly, the city is only narrowing a small and limited portion of Stanley Boulevard, and even that portion that will be narrowed will not "obstruct" fire vehicle access in practice because of the design mitigations discussed previously.

In consideration of the factors presented above, staff recommends that the City Council approve the traffic calming project design layout as presented and authorize staff to finalize drawing and specification documents to construct the project.

Recommendation

Approve traffic calming design layout as presented and authorize staff to finalize drawing and specification documents to construct the project.

Attachments

1. Excerpt from 2007 California Fire Code cited by Fire District Staff
2. Stanley Boulevard/Springbrook Road Traffic Calming Project Layout Drawings
3. Annotated Layout of Stanley Boulevard between Quandt Road and Vacation Drive

ATTACHMENT 1: EXCERPT FROM 2007 CALIFORNIA FIRE CODE

CHAPTER 5

FIRE SERVICE FEATURES

SECTION 501
GENERAL

501.1 Scope. Fire service features for buildings, structures and premises shall comply with this chapter.

501.2 Permits. A permit shall be required as set forth in Appendix Chapter 1, Sections 105.6 and 105.7.

501.3 Construction documents. Construction documents for proposed fire apparatus access, location of fire lanes and construction documents and hydraulic calculations for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

501.4 Timing of installation. When fire apparatus access roads or a water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles in accordance with Section 505.2.

SECTION 502
DEFINITIONS

502.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FIRE APPARATUS ACCESS ROAD. A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

FIRE COMMAND CENTER. The principal attended or unattended location where the status of the detection, alarm communications and control systems is displayed, and from which the system(s) can be manually controlled.

FIRE DEPARTMENT MASTER KEY. A limited issue key of special or controlled design to be carried by fire department officials in command which will open key boxes on specified properties.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

KEY BOX. A secure device with a lock operable only by a fire department master key, and containing building entry keys and other keys that may be required for access in an emergency.

SECTION 503
FIRE APPARATUS ACCESS ROADS

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exception: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

503.1.2 Additional access. The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

503.1.3 High-piled storage. Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 23.

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.7.

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

503.2.2 Authority. The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of

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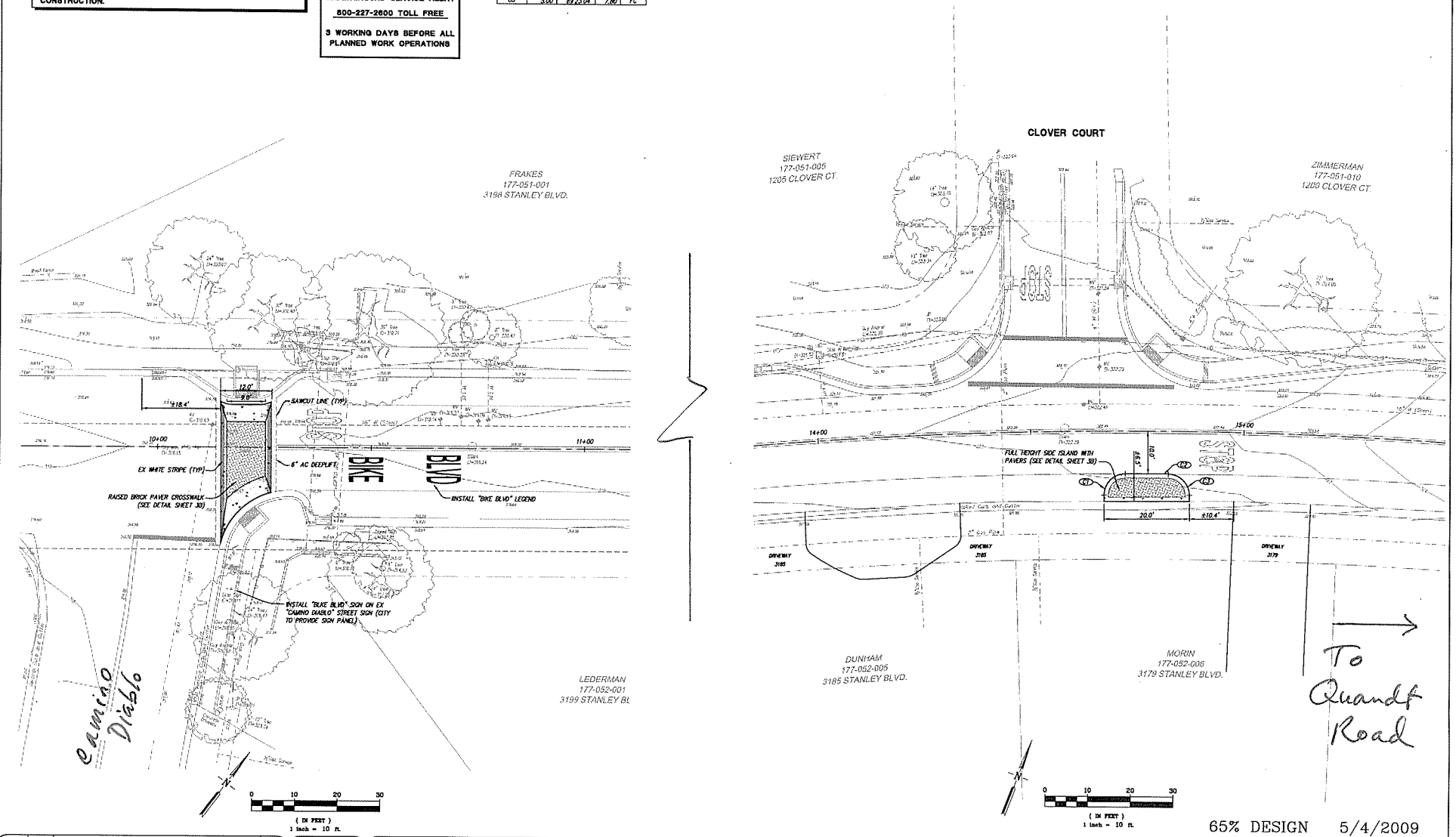
BEFORE EXCAVATING
CALL U.S.A.
UNDERGROUND SERVICE ALERT
800-227-2600 TOLL FREE
3 WORKING DAYS BEFORE ALL PLANNED WORK OPERATIONS

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	DESC
C1	5.00'	90°04'30"	7.86'	FC
C2	1065.00'	0°32'26"	10.05'	FC
C3	5.00'	82°23'04"	7.80'	FC



65% DESIGN 5/4/2009

DATE	MARK	REVISION	INIT.

Designed by: SBB
Drawn by: JY
Checked by: JSZ
Reviewed by:
Date:

Civil:
Sign: John S. Zellmer Date: X/XX/09

RJA
RUGGERI-JENSEN-AZAR
ENGINEERS • PLANNERS • SURVEYORS
2541 WARREN DRIVE, SUITE 100 ROCKLIN, CA 95677
PHONE: (916) 630-8900 FAX: (916) 630-8909
JN: 095004 File: F.B.

LAFAYETTE

REVIEWED BY:
CITY OF LAFAYETTE
Tony Coe, Engineering Services Manager Date

CITY OF LAFAYETTE
PROJECT NO. XXX-XXXX
STANLEY BLVD/SPRINGBROOK ROAD
TRAFFIC CALMING PROJECT
CONTRA COSTA COUNTY CALIFORNIA

STANLEY BOULEVARD/
SPRINGBROOK ROAD
9+50.00 TO 11+00.00 AND
13+50.00 TO 15+50.00
SCALE: AS SHOWN SHEET No. 4 of 9

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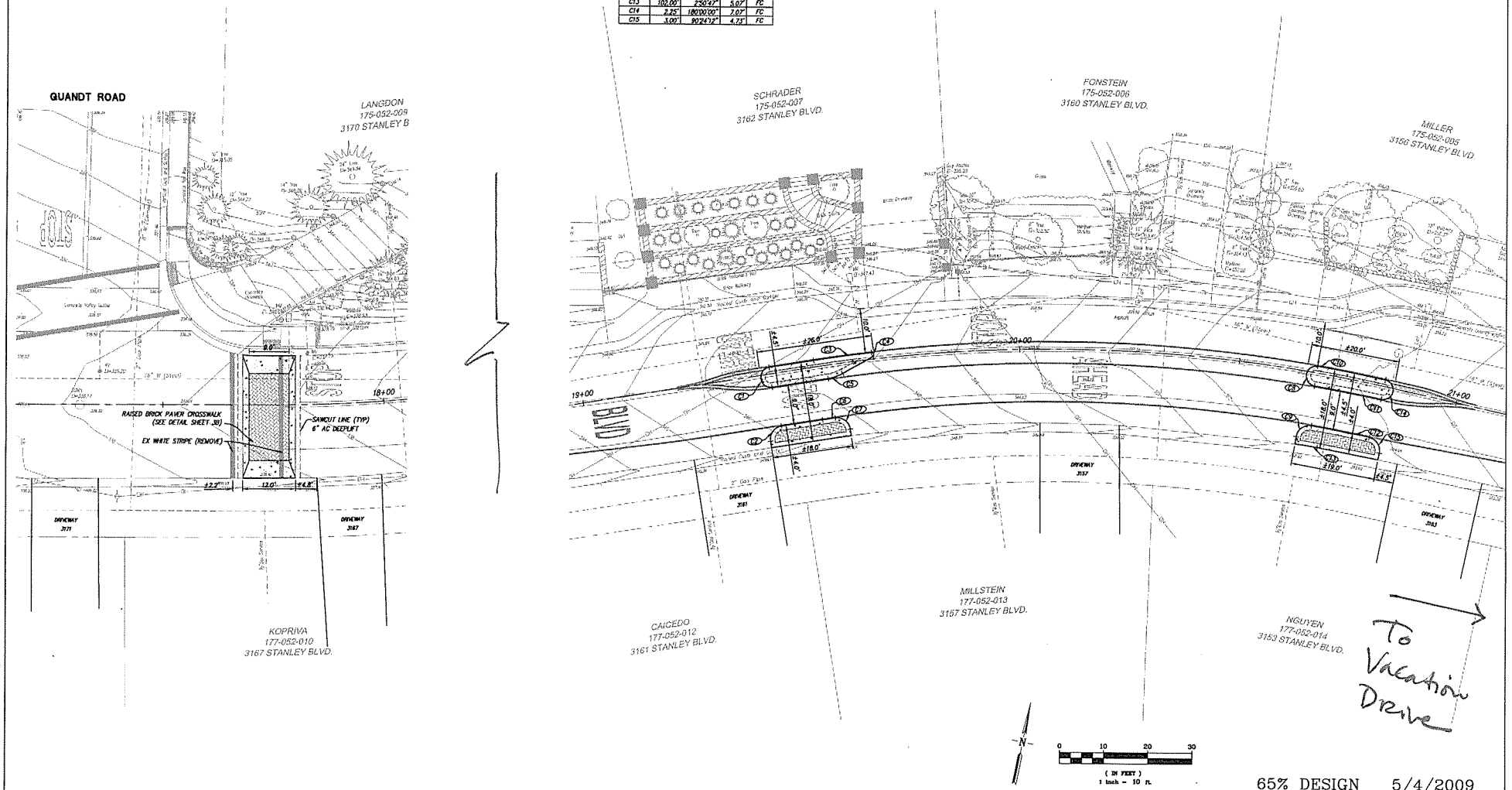
C1	2.25'	180°00'00"	7.07'	FC
C2	3.00'	90°00'00"	4.71'	FC
C3	351.50'	2°10'05"	13.30'	FC
C4	0.50'	157°49'55"	1.38'	FC
C5	10.00'	20°00'00"	3.49'	FC
C6	338.00'	0°22'31"	2.22'	FC
C7	3.00'	90°30'47"	4.74'	FC
C8	2.25'	180°00'00"	7.07'	FC
C9	3.00'	90°30'47"	4.74'	FC
C10	351.50'	2°32'30"	15.59'	FC
C11	347.00'	2°32'30"	15.39'	FC
C12	338.00'	2°15'44"	13.35'	FC
C13	102.00'	2°50'47"	5.07'	FC
C14	2.25'	180°00'00"	7.07'	FC
C15	3.00'	90°24'12"	4.73'	FC



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Sign: John S. Zellmer Date: X/XX/09

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STANLEY BOULEVARD/
SPRINGBROOK ROAD
17+00.00 TO 18+00.00 AND
19+00.00 TO 21+00.00
SCALE: AS SHOWN SHEET No. 5 of 9

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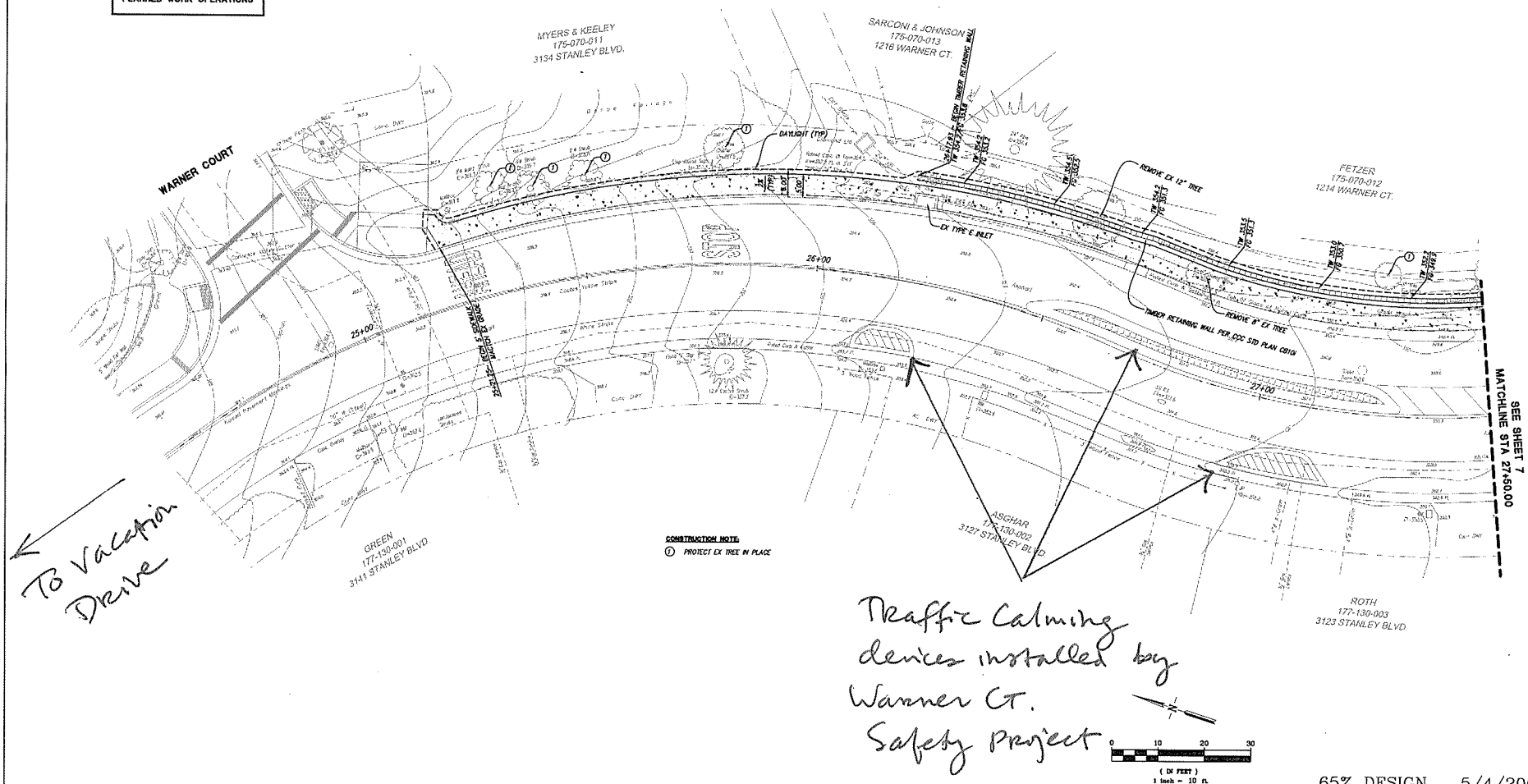

To Vacation Drive

CONSTRUCTION NOTE:
① PROTECT EX TREE IN PLACE

Traffic Calming devices installed by Warner Ct. Safety Project

0 10 20 30
(IN FEET)
1 inch = 10 ft.

65% DESIGN 5/4/2009

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Checked by: JSZ
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Sign: John S. Zeltmer Date: X/XX/09

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STANLEY BOULEVARD/
SPRINGBROOK ROAD
PLAN VIEW 24+50.00 TO 27+50.00
SCALE: AS SHOWN SHEET No. 6 of 9

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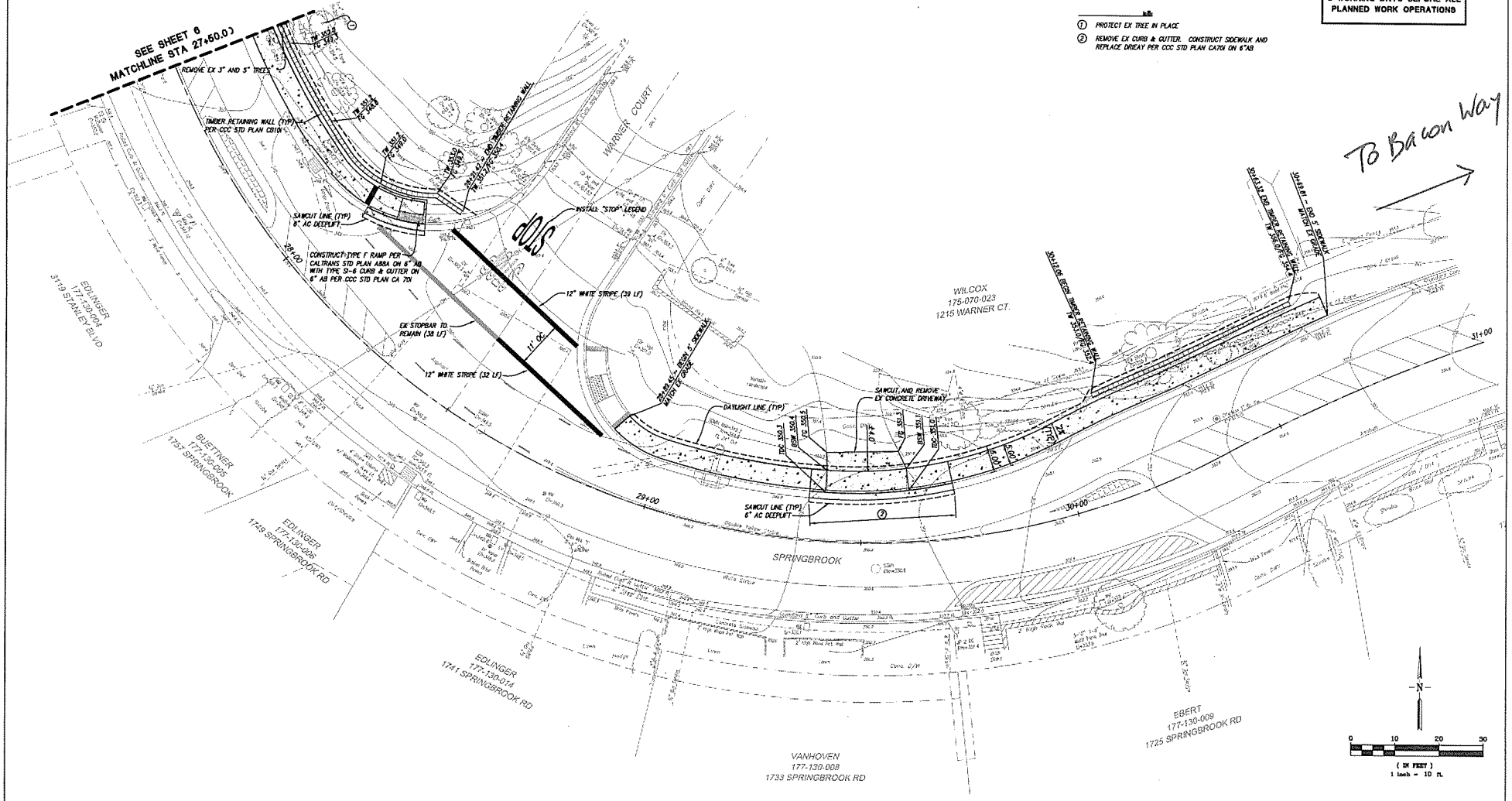

① PROTECT EX TREE IN PLACE

② REMOVE EX CURB & GUTTER. CONSTRUCT SIDEWALK AND REPLACE DRIVEWAY PER CCC STD PLAN CA701 ON 6"AB

65% DESIGN 5/4/2009

DATE	MARK	REVISION	INIT.

Designed by: SBB
Drawn by: JY
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Civil:
Sign: John S. Zellmer Date: X/XX/09

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STANLEY BOULEVARD/
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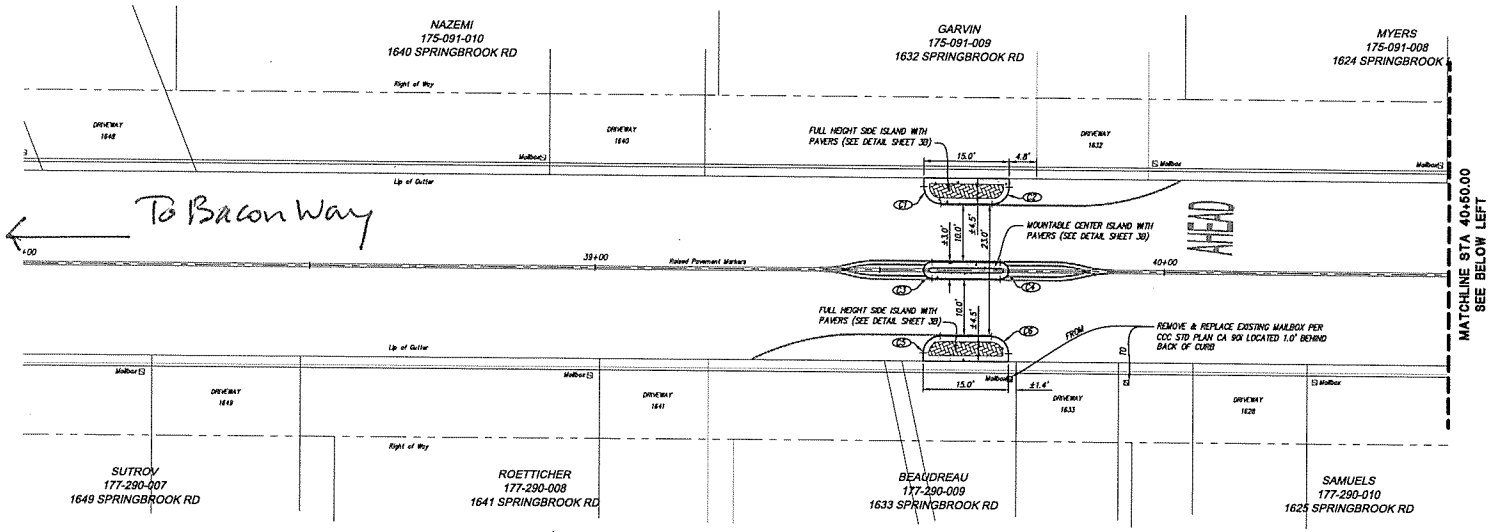
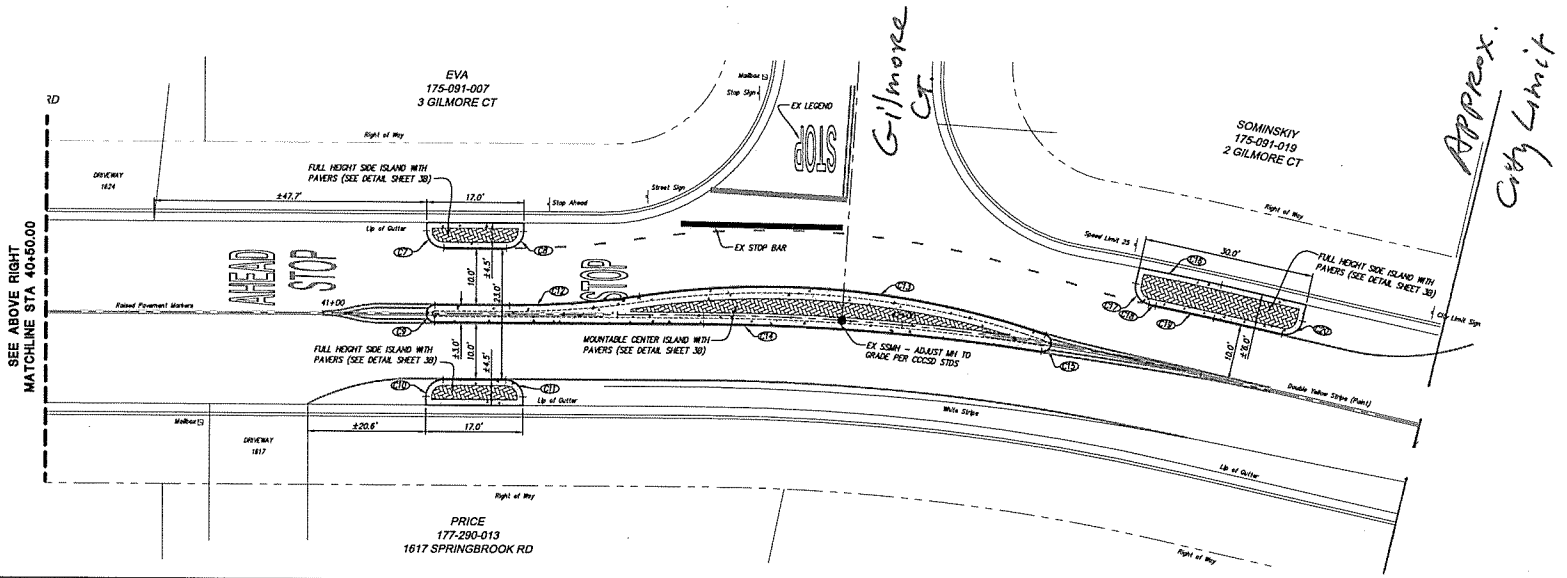
PLAN VIEW 27+50.00 TO 31+00.00
SCALE: AS SHOWN SHEET No. 7 of 9





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C7	3.00'	90°00'00"	4.71'	FC
C8	3.00'	90°00'00"	4.71'	FC
C9	1.50'	180°00'00"	4.71'	FC
C10	3.00'	90°00'00"	4.71'	FC
C11	3.00'	90°00'00"	4.71'	FC
C12	150.00'	8°45'38"	22.94'	FC
C13	150.00'	22°36'58"	22.30'	FC
C14	398.50'	8°34'22"	59.63'	FC
C15	1.50'	169°43'02"	4.44'	FC
C16	418.00'	2°01'38"	14.72'	FC
C17	3.00'	90°56'30"	4.76'	FC
C18	140.00'	0°30'49"	1.26'	FC
C19	410.00'	1°27'19"	10.41'	FC
C20	3.00'	90°00'00"	4.71'	FC

SEE SHEET STRIPING.

0 10 20 30
(IN FEET)
1 inch = 10 ft.

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STANLEY BLVD/
SPRINGBROOK ROAD
PLAN VIEW 38+00.00 TO 43+00.00
SCALE: AS SHOWN SHEET No. 8 of 9

ATTACHMENT 3: ANNOTATED LAYOUT, STANLEY BLVD BETWEEN QUANDT RD & VACATION DR